REMARKS

In view of the following remarks, the Examiner is requested to withdraw the rejections and allow Claims 37-43, 46-47, and 49-72, the only claims pending and currently under examination.

Formal Matters

Claims formerly numbered 67-72 have been renumbered to be in sequence with the preceding claims. Claims dependent on renumbered claims have been corrected to relate to the correct claim number on which they depend. As the above amendments introduce no new matter to the application, their entry by the Examiner is respectfully requested.

Claim Rejections – 35 U.S.C. § 102(b)

In the Office Action, Claims 37-43, 46-47, 49-50, 52-53, 56-58, 61-69, and 71-72 were rejected under 35 U.S.C. § 102(b) as being anticipated by Takauchi et al. (US 5,453; 333 hereafter Takauchi).

In making the rejection, the Examiner asserted that because Takauchi discloses a porous membrane having a second polymer, Takauchi anticipates Claims 37-43, 46-47, and 49-72 of the instant application.

Regarding rejections made under 35 U.S.C. § 102(b), the MPEP § 2131 states:

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

An element of the claimed invention is that the micro-valve employed in the claimed methods "comprises a phase reversible material stably associated with a high surface area component." [emphasis added]

From plain meaning of the phrase "stably associated" and the teaching of the specification (see paragraph 39 of the published application) which presents "bonding" as

a type of stable association, it is clear that phase reversible material in the micro-valve must be ~~attached to~~ associated with the high surface area component in a manner such that it cannot readily be removed from the high surface area component, even as it transitions from one phase to another. For example, one way of stably associating the material with a region that is illustrated in the specification is by the chemical bonding of the material to high surface area structures, while another method is by mechanically retaining the material with a solid permeable structure (see col. 6 line 24 to col. 7 line 44). In both of these embodiments, the phase reversible material is not free to move relative to the component with which it is associated, even under phase reversible conditions.

Turning now to Takauchi, in making this rejection the Examiner has equated the second polymer of Takauch with the micro-valve element of the present claims. However, Takauchi does not disclose that the second polymer is stably associated with any part of the pore channel, much less with a high surface area component. Specifically, in reference to Figs 1a and 1b, and col. 5, lines 44-52 of Takauchi, it is clear that the second polymer *flows* into the pores at a temperature above the melt temperature of the second polymer. By definition, the flowing of the polymer into the pore structure is a *dynamic process*, where the *spatial location* of the *second polymer changes* in order for the membrane to be impermeable.

As such, Takauchi fails to disclose a method using a device that includes a phase reversible material *stably associated* with a high surface area component.

Therefore, Claims 37-43, 46-47, 49-50, 52-53, 56-58, 61-69, and 71-72 are not anticipated by Takauchi and this rejection may be withdrawn.

Claim Rejections –35 U.S.C. § 103(a)

In the Office Action, Claims 54-55 and 59-60 were rejected under 35 U.S.C. § 103(a) as being obvious over Takauchi et al. in view of Hooper (US 5,569,364; hereafter Hooper).

In making this rejection, the Examiner asserts that Takauchi teaches all of the elements of the claimed invention except for the use of N-isopropylacrylamide as the second polymer, for which element the Examiner looks to Hooper.

According to the MPEP § 706.02 (j), to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Claims 54-55 are dependent on Claim 37, and Claims 59-60 are dependent on Claim 56. As reviewed above, Takauchi is deficient in that it fails to disclose a phase reversible material stably associated with a high surface area component.

Furthermore, as reviewed above, in the device disclosed in Takauchi, the second polymer of Takauchi *flows* into the pores of the membrane at a temperature above the melt temperature of the second polymer. This flowing of the polymer into the pore structure is a *dynamic process*, where the *spatial location* of the *second polymer changes* in order for the membrane to be impermeable. If one were to modify this disclosure so that the second polymer were stably associated with another structure, the second polymer could not flow into the pore as required and ~~therefor~~ therefore Takauchi's process would not work.

As such, Takauchi teaches away from methods where phase reversible material is stably associated with a higher surface area component, such as in the claimed methods.

As Hooper has been cited solely for the element of N-isopropylacrylamide as the second polymer, Hooper fails to cure the deficiency in Takauchi's teaching.

Accordingly, because the combination of the Takauchi et al. in view of Hooper fails to teach or suggest all the elements of the claimed invention, the combined teaching

of these references fails to make Claims 54-55 and 59-60 obvious. The Applicants, therefore, respectfully request that the rejection be withdrawn.

CONCLUSION

The Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone Mike Beck at 650 485-3864.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078.

Respectfully submitted,

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